

App. No. 10/678200
Office Action Dated April 7, 2004
Amd. Dated August 9, 2004

REMARKS

Reconsideration is respectfully requested in view of the above amendments and following remarks. Claims 1, 4, 5, 7, 10-12, 15, 16 and 18 are hereby amended. No new matter has been added. Claims 1-18 are pending.

Claim rejections - 35 U.S.C. § 102

Claims 1, 2, 4, 5, 10, 11, 13, 15, 16 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Juengling (US 6,627,549). Applicant respectfully traverses this rejection.

Claim 1 is directed to a semiconductor device having plurality of wirings with corners, parallel to each other with a clearance. Protrusions are formed at the corners so that the protrusions face the clearance between adjacent wirings.

Juengling teaches in Fig. 16 a wiring pattern with an existing live metal region 610 having a corner and an existing live metal region 620. 620 is parallel to one side of a live wire 630, however 620, does not have a corner. Further, 630 is added to the face of 610, 610a, to form a protrusion. Therefore, Juengling fails to disclose or suggest a plurality of wirings having corners, parallel to each other with a clearance, where protrusions are formed at the corners so that the protrusion faces the clearance between the adjacent wirings. Thus Juengling does not anticipate independent claim 1.

Withdrawal of the rejection is respectfully requested.

Claims 2 and 10 are dependent on claim 1. For the reasons discussed above for claim 1, withdrawal of the rejection is respectfully requested.

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Claim 4 is directed to a semiconductor device having a plurality of conductive film patterns formed on the semiconductor substrate. The conductive film patterns are separated with a certain clearance by a T-shaped groove or a cross-shaped groove. A protrusion is formed at a corner of at least one of the conductive film patterns positioned at a crossing of the respective grooves constituting the T-shaped or cross-shaped groove, protruding from one corner of the conductive film patterns toward the groove.

Fig. 12 of Juengling discloses a wiring pattern composed of an existing live metal 200 and an added floating metal 220. A live metal 230 is added to 200. 230 is in contact with a side of 220 and protrudes into a T-shaped groove. Though 230 forms a protrusion from one side of 200, it is not formed at a corner of the conductive film pattern. Further, 230 is not positioned at a crossing of respective grooves. Therefore, Juengling fails to disclose or teach a protrusion is formed at a corner of at least one of the conductive film patterns positioned at a crossing of the respective grooves constituting the T-shaped or cross-shaped groove, protruding from one corner of the conductive film patterns toward the groove. Thus Juengling does not anticipate independent claim 4. Withdrawal of this rejection is respectfully requested.

Claim 5 is directed to a semiconductor device having a configuration in which the first and second wirings are formed substantially in parallel with a predetermined spacing on the semiconductor substrate, the second wiring having an end at a point intermediate the length of the first wiring. A protrusion is formed at the end of the second wiring so as to protrude from a side of the second wiring toward a side of the first wiring.

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or at least one protrusion is formed at a side of the first wiring that faces the end of the second wiring so as to protrude toward the second wiring.

Juengling discloses in Fig. 16 an existing live metal 610 and an existing live metal 620 having parts parallel to each other. Live metal 631 and 632 are added to an edge of 620, protruding toward 610. 631 and 632 are formed to protrude toward the side part of 610, which is perpendicular to the edge of 620. Therefore, Juengling fails to disclose or teach a protrusion formed at the end of the second wiring so as to protrude from a side of the second wiring toward a side of the first wiring, or at least one protrusion formed at a side of the first wiring that faces the end of the second wiring so as to protrude toward the second wiring.

Further, Juengling discloses in Fig. 15 existing live metal 510 and existing live metal 520 that are parallel to each other, where live metal 521, 522 and 523 are added to a side part of 520 toward 510, decreasing the clearance. Since 521, 522 and 523 are added over the full length of the side of 520 there is no indication that 521, 522 or 523 are protrusions. Juengling fails to disclose or teach a protrusion is formed at the end of the second wiring so as to protrude from a side of the second wiring toward a side of the first wiring, or at least one protrusion is formed at a side of the first wiring that faces the end of the second wiring so as to protrude toward the second wiring. Thus, Juengling does not anticipate independent claim 5. Withdrawal of the rejection is respectfully requested.

Claim 11 is directed to a method of manufacturing a semiconductor device comprising the components of claim 1. Juengling fails to disclose or suggest method of

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manufacturing a semiconductor device comprising a plurality of wirings having corners, parallel to each other with a clearance, where a protrusion is formed at a corner of the wirings and the protrusion faces the clearance between the adjacent wirings. Thus Juengling does not anticipate independent claim 11. Withdrawal of the rejection is respectfully requested.

Claim 18 depends indirectly from claim 11. For the reasons discussed above for claim 11, withdrawal of this rejection is requested.

Claim 15 is directed to a method of manufacturing a semiconductor device comprising the components of claim 4. Juengling fails to disclose or teach a method of manufacturing a semiconductor device where a protrusion is formed at a corner of at least one of the conductive film patterns positioned at a crossing of the respective grooves constituting the T-shaped or cross-shaped groove, protruding from one corner of the conductive film patterns toward the groove. Thus Juengling does not anticipate independent claim 15. Withdrawal of this rejection is respectfully requested.

Claim 16 is directed to a method of manufacturing a semiconductor device comprising the components of claim 5. Juengling fails to disclose or teach a method of manufacturing a semiconductor device where a protrusion is formed at the end of the second wiring so as to protrude from a side of the second wiring toward a side of the first wiring, or at least one protrusion is formed at a side of the first wiring that faces the end of the second wiring so as to protrude toward the second wiring. Thus, Juengling does

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not anticipate independent claim 16. Withdrawal of the rejection is respectfully requested.

Claim rejections - 35 U.S.C. § 103

Claims 3 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Juengling (US 6,627,549) in view of Hartranft et al. (US 5,846,874). Applicant respectfully traverses this rejection. Claims 3 and 14 depend on claims 1 and 11 respectively. Hartranft does not remedy the deficiency of Juengling. For the reasons discussed above for claims 1 and 11 withdrawal of this rejection is respectfully requested.

Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Juengling (US 6,627,549) in view of Jain et al. (US 6,653,717). Applicant respectfully traverses this rejection. Claims 6, 7, and 8 depend on claims 1, 4 and 5 respectively. Jain alone does not remedy the deficiency of Juengling. For the reasons discussed above for claims 1, 4 and 5 withdrawal of this rejection is respectfully requested.

Claim 9 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Juengling (US 6,627,549). Applicant respectfully traverses this rejection. Claims 9 and 17 depend on claims 1 and 11 respectively. For the reasons discussed above for claims 1, and 11 withdrawal of this rejection is respectfully requested.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Juengling (US 6,627,549) in view of Jain et al. (US 6,653,717) and in further view of Wu et al. (US 2004/0056351). Applicant respectfully traverses this rejection. Claim 12 depends on

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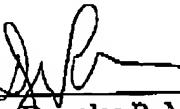
claim 11. For the reasons discussed above for claim 11 withdrawal of this rejection is respectfully requested. Neither, Jain nor Wu remedies the deficiency of Juengling.

Applicants are not conceding the relevance of the references to the features of the dependent claims.

In view of the above, favorable reconsideration in the form of a notice of allowance is requested. Any questions or concerns regarding this communication can be directed to the undersigned attorney, Douglas P. Mueller, Reg. No. 30,300, at (612)371.5237.

Respectfully submitted,

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DPM:smm

